Claims

[1] A conductive composition formed of a mixture of liquid silicon rubber and conductive carbon black, wherein a weight ratio between the liquid silicon rubber and the conductive carbon black is 100:1~15.

[2] The conductive composition of claim 1, wherein the size of a particle of the conductive carbon black is 20 through 40 nm and the amount of absorption of dibutyl phthalate (DBP) is 300 through 500 ml/100g.

[3] A conductive composition formed of a mixture of liquid silicon rubber and graphite powder, wherein a weight ratio between the liquid silicon rubber and the graphite powder is 100:10~150.

[4] The conductive composition of claim 3, wherein the size of a particle of the graphite powder is 1 through 10 micrometer and electrical resistance is 0.0005 through 0.08 Ω·cm.

[5] The conductive composition of either claim 1 or 3, wherein the thermal expansion coefficient of the liquid silicon rubber is $200\times10^{-6}\cdot K^{-1}$ through $300\times10^{-6}\cdot K^{-1}$.

[6] The conductive composition of either claim 1 or 3, wherein a diluent is added to make the flow of the conductive composition smooth.

[7] The conductive composition of claim 6, wherein the diluent is toluene or xylene.

[8] A carbon flexible heating structure formed by molding a conductive composition obtained by mixing liquid silicon rubber and carbon black at a weight rate in a range of 100:1~15 into a particular shape and curing a mixture.

[9] A carbon flexible heating structure formed by molding a conductive composition obtained by mixing liquid silicon rubber and graphite powder at a weight rate in a range of 100:10~150 into a particular shape and curing a mixture.

[10] The carbon flexible heating structure of either claim 8 or 9, wherein the carbon flexible heating structure has the shape of a mesh, a rod, a plate, a ring, or a bar.

[11] The carbon flexible heating structure of either claim 8 or 9, wherein the carbon flexible heating structure is a reinforcing material of a conductive composition filled with short staples.

[12] The carbon flexible heating structure of claim 10, wherein the mesh is a fabric made of a woof and a warp and has port portions formed longer than the woof or the warp of the fabric, and the port portions are formed of a conductive metal wire having superior conductivity.

[13] The carbon flexible heating structure of claim 12, wherein the port portions are tin-plated copper wires or silver wires.

[14] The carbon flexible heating structure of claim 11, wherein the diameter of the

short staple is 1 through 50 micrometer and the short staple is one of a glass fiber, a carbon fiber, and a graphite fiber.

[15] The carbon flexible heating structure of either claim 8 or 9, wherein insulation coating formed of an insulating mixture obtained by mixing liquid silicon rubber and a diluent and agitating a mixture is provided on a surface of the carbon flexible heating structure.

[16] A method of manufacturing a carbon flexible heating structure, the method comprising:
mixing a conductive composition formed of liquid silicon rubber and a filler;
agitating a mixture of the liquid silicon rubber and conductive carbon black by adding a diluent at a rate of 1~100% with respect to the weight of the liquid silicon rubber; and
molding the mixture into a particular shape and curing the molded mixture.

[17] The method of claim 16, wherein in the conductive composition the weight rate between the liquid silicon rubber and the conductive carbon black is 100:1~15.

[18] The method of claim 16, wherein in the conductive composition the weight rate between the liquid silicon rubber and graphite powder is 100:10~150.

[19] The method of claim 16, wherein in the molding and curing of the mixture the conductive composition is molded by pasting or coating the conductive composition on a frame structure having the shape of a mesh, a rod, a plate, a ring, or a bar.

[20] The method of claim 19, wherein in pasting or coating the conductive composition on the frame structure the thickness of the paste or coating is 0.05 through 0.15 mm.

[21] The method of claim 16, wherein in the molding and curing of the mixture the conductive composition is molded to have the shape of a mesh, a rod, a plate, a ring, or a bar.